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BEFORE THE ARIZONA CORPORATION COMMISSION

Arizona Corporation Commission
DOCKETED
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DOCKETED BY

RENZ D. JENNINGS
CHAIRMAN
MARCIA WEEKS
COMMISSIONER
DALE H. MORGAN
COMMISSIONER

IN THE MATTER OF THE A.A.C. R14-2-704 HEARING FOR RESOURCE PLANNING.

DOCKET NO. U-0000-90-088

DECISION NO. 57589

OPINION AND ORDER

DATE OF HEARING:	August 17, 1990 (procedural conference) November 28, 29, 30, December 3, 4 and 5, 1990
PLACE OF HEARING:	Phoenix, Arizona
PRESIDING OFFICER:	Jerry L. Rudibaugh
IN ATTENDANCE:	Renz D. Jennings, Chairman Dale H. Morgan, Commissioner
APPEARANCES:	JOHNSTON, MAYNARD, GRANT & PARKER, by Mr. Michael M. Grant, on behalf of Arizona Electric Power Cooperative;
	FENNEMORE CRAIG, P.C. by Mr. C. Webb Crockett and Mr. Timothy Berg, on behalf of Tucson Electric Power Company;
	Ms. Jane D. Alfano, Salt River Project Law Department, on behalf of Salt River Project;
	SNELL & WILMER, by Mr. Thomas L. Mumaw, on behalf of Arizona Public Service Company; and
	Mr. Andrew W. Bettwy, Associate General Counsel, on behalf of Southwest Gas Corporation;
	Mr. Roger A. Schwartz, Chief Counsel, and Mr. K. Justin Reidhead, Senior Counsel, on behalf of the Residential Utility Consumer Office;
	Ms. Janice M. Alward and Mr. Stephen Burg, Staff Attorneys, Legal Division, on behalf of the Arizona Corporation Commission Staff.

BY THE COMMISSION:

The Arizona Corporation Commission ("Commission") in Decision No. 56689, dated April 26, 1990, ordered the Hearing Division to schedule a hearing on resource planning for November 28, 1990 or later. Pursuant to the April 30, 1990 Procedural Order, the above-captioned matter was set for hearing commencing on November 28, 1990. Pursuant to A.A.C R14-2-703, Arizona Public Service Company ("APS"), Tucson Electric Power Company ("TEP"), and Arizona Electric Power Cooperative ("AEPCO") (collectively "Utilities") had to file integrated resource plans.

Intervention in this matter was granted to the Arizona Residential Utility Consumer Office ("RUCO"), Salt River Project ("SRP"), and Southwest Gas Corporation ("Southwest Gas").

This matter came before a duly authorized Hearing Officer of the Commission at the Commission's offices in Phoenix, Arizona on November 28, 1990. APS, SRP, AEPCO, TEP, Southwest Gas, RUCO, and the Utilities Division Staff ("Staff") appeared through counsel. Evidence was presented concerning resource planning and after a full public hearing, this matter was adjourned pending submission of a Recommended Opinion and Order by the Presiding Officer to the Commission.

DISCUSSION

The costs of building and maintaining power plants in the United States have increased dramatically over the past 40 years. In the 1950's, for example, power plant construction costs were $100 per kilowatt. In contrast, the cost for the Palo Verde Nuclear Generating Station, which became operational in the mid 1980's, cost $2,500 per kilowatt. The increased costs of building additional generating capacity are reflected in higher electricity rates to customers.

As both the cost and price of electricity escalated throughout the 1970's and 1980's, utilities and utility regulators began focusing attention on alternative ways to meet the demand for electricity. A new discipline, termed integrated resource planning, evolved that embraced the principle that utilities should strive to meet the demand for electricity in the least costly way to society.

Furthermore, the practice of integrated resource planning requires a fundamental change in the traditional ways that utilities plan in serving future electric loads. Planners must consider not only traditional supply side options (power plants) but also alternative technologies such as solar power, non-utility generation such as customer owned cogeneration, conservation, and environmental impacts in a systematic, integrated manner. Costs to be considered are capital, operating, fuel, and environmental costs that will be incurred in the future, whether they fall on the utility, ratepayers, or others.

Integrated resource planning can overcome historical problems with poor load forecasting, inflexible planning in the face of uncertainty, failure to consider conservation as a cheaper alternative than generating electricity to achieve the same ends such as lighting, cooling or torque, inadequate consideration of alternative generating technologies, adverse environmental impacts of power generation, and insufficient coordination among supply and demand side analysts.

The conduct of integrated resource planning requires complex technical analyses, coordination of the efforts of several utility departments, collaborative efforts among utilities, regulators and other parties, and design of environmentally compatible means of meeting the demand for electric energy services.

Integrated resource planning thus creates a much wider range of choices, through technical analyses, collaborative efforts, and design of environmentally compatible supply and demand measures, than could have been achieved under traditional planning methods.

As discussed in the workshops in this proceeding, the initial exercise in integrated resource planning occurred in Arizona in 1985 when the Commission issued a study of power supply in the state. Among other findings, the study suggested that Coronado Unit 3, then under construction by SRP was not needed, if SRP arranged for the purchase of power from other Arizona utilities with excess power capacity. In 1988, SRP stopped construction of Coronado Unit 3 and agreed to long-term contracts with Tucson Electric Power Company and Arizona Electric Power Cooperative. As a result, SRP expects that it will save its customers about $185 million between 1990 and 2011.

Following the 1985 Commission study, the Commission Staff initiated a series of meetings with representatives of the utilities to discuss a formal process for implementing integrated resource planning in Arizona. In 1987, integrated resource planning rules were drafted by Staff and the Commission adopted final rules in 1989.

The Resource Planning Rules, A.A.C. R14-2-701, R14-2-702, R14-2-703, and R14-2-704, were adopted by the Commission for the purpose of minimizing the total cost of providing electric energy services by improving long range planning. In furtherance of the aforementioned goal, A.A.C. R14-2-702 and R14-2-703 require that those electric utilities with generating facilities which come under the Commission's jurisdiction must file an integrated resource plan with the Commission once every three years. Staff is then required by A.A.C. R14-2-704 to perform an analysis of the resource plans.

Pursuant to A.A.C R14-2-704, the Commission is to determine the degree of consistency between the integrated resource plans filed by the Utilities and the analysis conducted by Staff, as well as information provided by other parties. In making its consistency determination, the Commission is to consider among other things the following:

1. The total cost of electric energy services;
2. The degree to which the factors which affect demand, including demand management, have been taken into account;
3. The degree to which non-utility supply alternatives, such as cogeneration and self generation, have been taken into account;
4. Uncertainty in demand and supply analyses, forecasts, and plans, and the flexibility of plans enabling response to unforeseen changes in supply and demand factors; and
5. The reliability of power supplies.

Further, A.A.C. R14-2-704 provides for a hearing to be held in order to make the consistency determination.

The Utilities and SRP filed their first integrated resource plans for consideration pursuant to A.A.C R14-2-704. A hearing was set to review those plans for consistency. At the request of Staff, the hearing was divided into the following four major topics:

A. The purpose of resource planning and the criteria used to make planning decisions;

B. Long-term load forecasting;

C. Supply-side management for resource planning, including utility generation, self-generation, and alternative technology; and

D. Conservation and demand-side management, including conservation measures, utility programs such as incentives, and incentives for utilities to engage in conservation and demand-side management.

PURPOSE OF RESOURCE PLANNING AND THE CRITERIA USED TO MAKE PLANNING DECISIONS

According to Staff, the purpose of resource planning is to "minimize the costs of providing electric energy service by improving long range planning and by identifying opportunities for additional savings." If properly implemented, Staff expects the following results from resource planning over the next ten years:

A. A wider perspective for utility planning integrating supply and demand alternatives and incorporating the total costs of alternatives, not just utility costs;

B. Greater public involvement in resource planning;

C. Limited construction of new power plants;

D. Actions to reduce the costs of electric energy services through economical conservation;

E. A wider mix of generation technologies;

F. Reduced environmental degradation associated with power production;

G. Improved forecasting techniques; and

H. Recognition of uncertainty in planning.

The parties were in general agreement with the purpose of resource planning and the desired results. However, there were major disagreements as to the implementation of resource planning. Staff recommended specific supply and demand side measures (in addition to those in utilities' plans) intended to lower the cost of meeting the demand for electric energy services and RUCO recommended an all source bidding program in which competitive markets would determine the resources selected. The Utilities were in favor of developing plans based on specific knowledge of their customers.

According to RUCO, the Staff proposal would result in the Commission making choices between technologies instead of the Commission acting in an oversight capacity. RUCO and the Utilities argued that the Staff approach should be rejected as it will lead to premature selection of programs, projects and technologies based on a suboptimal process. Further, RUCO argued that Staff's approach would provide full cost recovery with no risk to the Utilities for following Staff's action plan. According to RUCO, the ratepayers would bear all the costs and risks.

Staff rejected RUCO's all source bidding program as unrealistic. According to Staff, it will take several years to develop and evaluate proposals for all demand and supply side programs which will result in lost resource planning time and effort. Staff also expressed concern that RUCO's proposal would result in a very elaborate process with large administrative costs. In spite of its concerns, Staff did concur that competitive bidding programs are useful to identify potential savings and recommended a bidding system be implemented at the next resource planning hearing.

We believe Staff's approach would result in the largest number of resource planning programs in the short-term but would also result in the highest costs for the same period. Staff's approach may also shift from utility management to the Commission the responsibility, as well as the public accountability, for the programs selected. Whether Staff's approach will result in the minimum long-term costs is unclear at this time. Because of uncertainty, the same long-term statement can be made of any approach. Although RUCO's recommended approach may be optimal long-term, we concur with Staff's analysis that it will take several years to implement and consequently, could result in lost resource planning time. We are not convinced at this time, that any one approach is overall superior. At the same time, we find each approach has some merit and we will strive to implement resource planning that utilizes the best of each approach.

All the parties were in general agreement that resource planning should take environmental concerns into consideration. In fact, A.A.C. R14-2-701 specifically includes "environmental effects" as part of the total costs definition:

> All Capital, Operating, Maintenance, fuel, and Decommissioning costs incurred in the provision or conservation of electric energy services borne by end users, Utilities, or others, and <u>any adverse environmental effects</u>. (emphasis added)

However, there was a major difference between Staff and the other parties as to the extent the effect on the environment should be taken into account in resource planning. Staff recommended that any decision involving resource planning should be based solely on a Total Societal Test which would include not yet identified qualitative environmental concerns. Because of the difficulty of assigning monetary values, Staff was of the opinion that environmental impacts should be treated qualitatively. Under the Staff proposal, it is only at the time that a specific supply or demand side proposal is identified that environmental and other social costs are identified. These costs, when identified, can be quantified, monetized, or assessed on a qualitative basis when appropriate and cannot otherwise be quantified.

RUCO also recommended the Total Societal Test be adopted as the primary basis for making an economic evaluation of resources. However, RUCO did not believe the Total Societal Test should predominate over ratepayer concerns. Absent a clear statement from the Commission that some other factor outweighs the economic impact on ratepayers, RUCO recommended that any party proposing a decision other than one based on the impact to ratepayers should assume a high burden of proof. The Utilities and SRP argued that the Total Societal Test should not be exclusive or even the primary test. They argued that the Total Societal Test suffers from both theoretical and practical limitations. It assumes significant externalities in the production and consumption of electricity but does not attempt to identify, quantify, or prioritize the externalities. If it is to be the only test, the Utilities argued that there will need to be a task force formed to identify and quantify the various externalities. Even at that, the Utilities argued that the Total Societal Test should not predominate over ratepayer concerns, utility financial stability, or economic growth within the service area. Even one of Staff's witnesses from the Arizona Energy Office ("Energy Office") recognized the importance of identifying the total social costs of electricity generation and recommended Staff coordinate "the efforts of a Commission-sponsored task force with the objective to identify the total social costs of electricity generation. Representatives of various utilities, state agencies, customer groups, environmental groups, and other interested citizens should be invited to be either members of the task force or to provide information."

We concur with Staff that the primary test should be the Total Societal Test with consideration given to environmental concerns. We do not concur that these effects should be based on some not yet identified qualitative basis. That can result in each decision maker arriving at a different conclusion based on identical facts. In addition, use of the Total Societal Test must be tempered with economic concerns. We believe the proper approach is to utilize the recommended task force with the objective to identify and quantify the various environmental costs and other externalities such as resource diversity, land use, or economic development. This Commission certainly recognizes the importance of protecting our fragile environment. However, there must be a careful balancing of the costs and benefits including consideration of ratepayer concerns, utility financial stability, and economic growth within the service areas. We are under no illusion that such a task will be easy, however, an up front agreement on the factors to be considered and their quantification will reduce the uncertainty and disagreements down the road. The results of the task force are to be presented by January 1, 1993 for Commission approval. At subsequent resource planning hearings, parties can recommend additions/changes to the costs to be considered and their associated quantification. The framework to be considered by the task force should outline how these costs are to be quantified and/or monetized. In addition, the task force should address the suitability of assessing the costs on a qualitative basis when those costs cannot otherwise be quantified or monetized.

LONG-TERM LOAD FORECASTING

A.A.C. R14-2-702 requires each of the jurisdictional electric utilities to include a long-term load forecast as part of its resource planning filing. In turn, the Commission is to make a consistency determination of the forecasts. Based on Staff's analysis, all the demand forecast models (including Staff's) need to improve their data quality, "including survey methods, end-use metering, and disaggregation of sales data." Staff also recommended that TEP incorporate more end-use analysis in its model.

Although Staff recommended all the parties continue to share ideas to improve load forecasting techniques, there were no recommended inconsistencies for any of the Utilities or SRP. Hence, we conclude that all the load forecasts were consistent. We also encourage Staff to conduct additional meetings/workshops with the Utilities/other interested parties for the exchange of ideas on improving load forecasts.

SUPPLY-SIDE MANAGEMENT

Generally, all the parties were in agreement that utilities in Arizona have sufficient generating resources at this time and do not face any immediate need for new resources. Staff recommended adoption of a rebuttable presumption that future construction of intermediate and peaking power plants should be solar thermal power. To overcome the rebuttable presumption, a utility must demonstrate that a solar thermal plant is <u>significantly more expensive</u> than alternative generation technologies. As part of the cost analysis, the utility must take air quality into account as well as other environmental effects in making its assessment.

All the other parties to the proceeding disagreed with Staff's recommendation to favor solar technology with a rebuttable presumption. RUCO and the electric utilities argued that Staff had not presented evidence to support the adoption of a rebuttable presumption. According to the electric utilities, solar technology is already considered as part of their planning and review process. For that reason, it would be unnecessary as well as unfair to other technologies to "stack the deck" in favor of solar. RUCO expressed concern that without any clearly defined quantification of the value of "environmental effects", the electric utilities will simply take the path of least resistance and opt for solar while more cost-effective options are ignored.

We certainly commend Staff for attempting to maximize the use of a resource that is abundant in sunny Arizona. However, we share many of the concerns expressed by the other parties. There was not sufficient evidence to support one industry (solar) enjoying the proposed rebuttable presumption over all other industries. Staff's recommended rebuttable presumption is almost, if not, impossible to overcome. It's not clear how a utility could demonstrate that a non-solar power plant would be significantly more expensive than a solar power plant. First, it is difficult to determine what is significantly more expensive when the term "significantly" has not been defined. But, to also overcome the unquantified "environmental effects" as part of the assessment is simply an impossible task. Under the above scenario, the only assured way for a utility to recover the cost of its investment is to always construct solar power plants. Even if the non-environmental costs are 100 percent or more higher for the solar power plant, the utility, or anyone else for that matter, can use its qualitative judgment on environmental effects to offset all other costs. The net result could be much higher utility rates for an unmeasurable qualitative improvement in the environment. As pointed out by the Utilities, adoption of the solar rebuttable presumption as well as the qualitative environment criteria could be economically disastrous if not mandated for all power producers both in and out of the state. For example, assume a solar generating plant resulted in 50 percent higher non-social costs than a comparable non-solar plant. Next, assume after the Commission reviewed the qualitative social costs it concluded the solar plant was the overall lowest cost. As a result, the ratepayers must arguably pay 50 percent higher current costs for some environmental improvement in the future. An elderly ratepayer might argue it is unfair for him(her) to foot the bill so that younger ratepayers can enjoy clean air in the future. One could make an offsetting argument that through the years the elderly ratepayer has caused more of the polluted air and must now pay for his(her) share. Assuming one can resolve the above potential inequity problem, there is the broader economic problem. An easy example would be a jurisdictional electric such as APS being ordered by the Commission to construct a plant whose non-social cost was 50 percent higher while SRP was able to build the less expensive non-social cost plant. Not only would APS ratepayers pay higher rates, but they probably would not enjoy any of the social benefits since the air could still be polluted by SRP. The next logical step would be ratepayers (both residential and commercial) locating/relocating in the SRP service area. There could end up being a reduction of customers/use in the APS area resulting in even higher rates.

Even if SRP were to utilize the same social cost test imposed on the jurisdictional electrics, one still must consider the possible impact if it is not followed by other states. Arizona could end up being a very clean state (assuming pollution does not drift in from neighboring states) without any jobs. In summary, we do not believe it is fair to ratepayers to end up with potentially large rate increases to pay for someone's qualitative judgment as to their perceived improvement in the environment. At the same time, we acknowledge that solar technology has enormous potential in Arizona. Because of the abundance of sunshine in our state, we wholeheartedly believe that solar technology should be considered in all cases of future construction of intermediate and peaking power plants.

To ensure it is considered, we will adopt a requirement that a cost analysis be performed for each of the resources considered and that solar thermal plants must be included as a possible alternative for the future intermediate and peaking power plants. Unlike Staff's proposed rebuttable presumption, under this approach, a utility would simply have to demonstrate that the total capital, operating, maintenance and fuel costs of the selected resource is the least cost. To the extent environmental costs are quantified in future resource planning hearings, those costs should be included in the total costs to be considered. The fact that environmental costs will be considered should provide solar technology with a major advantage. However, we will revisit the question of rebuttable presumption in subsequent resource planning proceedings if it appears that the Utilities are not giving adequate consideration to solar thermal plants.

In addition to the solar thermal plants, Staff recommended the Utilities be required to include stand-alone photovoltaic ("PV") systems as an option for the remote customer in line extension cases where PV systems are cost competitive with the line extension. The Utilities argued they should not be required as regulated utilities to provide PV systems. Conversely, ratepayers should not be forced to pick up the higher costs of conventional construction/extension when a less costly alternative exists.

We generally concur with Staff's recommendation that the Utilities should be required to include stand-alone PV systems as an option for the remote customer in line extension cases where PV systems are cost competitive with the line extension.

Staff expressed their opinion that PVs could be cost effective in distribution systems as a means of dealing with thermal overloads. Based on that opinion, Staff recommended APS be required to implement a pilot project in which PVs are used at a substation to overcome problems with thermal overload or other transmission and distribution problems. APS expressed doubt as to the practicality of using PVs to relieve substantial overload. However, APS was willing to study the feasibility of such a project and report back to the Commission. Although no specific recommendation was made regarding AEPCO, they supported Staff's recommendations on thermal storage and expressed a willingness to work with Staff on implementing a pilot project. We concur that PVs may be cost effective in distribution systems as a means of dealing with thermal overloads. There also may be other cost effective uses of PVs in transmission and distribution systems. We, therefore, will direct that further study be done on the use of PVs in transmission and distribution systems.

DEMAND SIDE MANAGEMENT

Staff recommended a menu of demand side management ("DSM") programs for each Utility which, according to Staff, would minimize the costs of providing electric energy services. In general, Staff's programs consisted of the following subjects:

A) Conservation lighting;

B) Promoting tree planting; and

C) Incentives for variable speed drive motors.

The Utilities were of the opinion that the biggest hurdles to successful DSM programs were marketing to consumers, knowledge of the "rules" by Utilities, and return of costs to Utilities.

As to conservation lighting, Staff recommended 18-month goals for replacing inefficient fixtures in large commercial office buildings in each of the Utility's service areas. Those individual Utility goals were as follows:

A. APS' commercial customers should put specular reflectors in at least 35,000 fixtures and reduce lamps by 50 percent in those fixtures within 18 months;

B. TEP's commercial customers should put specular reflectors in at least 10,000 fixtures and reduce lamps by 50 percent in those fixtures within 18 months; and

C. AEPCO's members' commercial customers should put specular reflectors in at least 4,000 fixtures and reduce lamps by 50 percent in those fixtures within 18 months.

APS concurred with Staff that commercial lighting is clearly an example of cost effective DSM, however, APS argued that the

Utilities need flexibility to design and implement programs that fit their individual needs and circumstances. Similarly, AEPCO expressed concern that their service area did not have sufficient numbers of large commercial buildings to meet Staff's recommended goals.

Although it concurred with Staff's recommendation to replace inefficient fixtures, the Energy Office recommended emphasis be on new construction. The Energy Office recommended that all the parties work together to develop improved specifications for energy efficiency for newly constructed buildings. According to the Energy Office, it would be more cost effective to construct an energy efficient building than to retrofit older buildings. The Energy Office, with support from RUCO, also recommended that further study be conducted on the desirability of implementing hook-up fees for newly constructed buildings.

We concur with the Energy Office that construction of energy efficient buildings is a desirable goal which merits further study. Certainly part of that study would be the consideration of implementing graduated hook-up fees that encourage construction of energy efficient buildings. In general, the more efficient the building, the less would be the hook-up fee. Any study should take into consideration the possible added cost or less total cost on the affordability of homes due to the balancing of lower utility costs vis-a-vis mortgage costs. We recommend a task force of appropriate representatives be convened to study this matter and report back to the Commission.

Another related area has to do with the various economic development incentives offered by Utilities to new business subscribers. In general, these are packaged as a discount from normal electric rates for a period of several years as an incentive for new businesses to locate within our state. We concur that these are in most part desirable to the state economically. However, we believe the primary emphasis should be placed on the new business having energy efficient buildings/equipment. This would result in a longer term benefit for everyone. Although it is clearly beneficial to the utility and often to the new or expanding business to invest these discounts in long-term energy efficiency, this is but one of many factors which should be considered when faced with the decision of whether the utility should offer and the Commission approve a rate discount proposal. Moreover, it would be unfair to impose new conditions on pre-existing economic development provisions such as APS' Schedule 9.

To promote tree planting, Staff recommended each utility offer a rebate for trees purchased in 15-gallon containers. The trees would have to be planted to maximize shade and would have to be compatible with xeriscaping. The rebate goals for APS, TEP, and AEPCO, were for 20,000 trees, 7,000 trees, and 3,000 trees, respectively.

Generally, all the parties recognized that trees provide some benefits to society. As succinctly put by SRP, "we like trees" as long as they don't interfere with power lines. RUCO expressed two main criticisms of Staff's tree program. According to RUCO's analysis, Staff's program would not produce net positive benefits for at least 14 years. In addition, RUCO recommended the costs of tree planting program be privatized to those homeowners who actually benefit from the programs. The Utilities expressed concern regarding the administrative difficulty of insuring that trees are properly planted both to survive as well as being oriented for maximum benefit. In fact, the Utilities generally questioned the practicality of Staff's program since there was a lack of industry support from tree growers and retailers. Except for its Trico and Mohave service areas, AEPCO questioned the appropriateness of planting trees in its service areas. We note that because of AEPCO's concerns, Staff reduced its recommended rebate goal for AEPCO to 1,000 trees.

The Utilities were generally in favor of placing the primary emphasis on educational programs instead of rebate programs. According to the Utilities, the tree rebate program will result in short term benefits while an education program will provide longer term benefits. One of the APS proposed programs which we found of particular interest was entitled "Education Energy Audit & Environmental Program" which was aimed at 7th, 8th and 9th grade science students. The program was premised upon having grade school and high school students learn about and actually perform energy audits on their own homes, including inspecting their homes and analyzing their home energy consumption from data supplied by APS.

The positions of both Staff and the Utilities have merit. We believe Staff's proposed tree program may result in benefits exceeding costs. We also believe that effective educational programs as proposed by the Utilities will provide longer term benefits. We will, therefore, attempt to take advantage of both positions. First, we will encourage all the Utilities to continue to enhance their education programs which include education on vegetation. Second, we will recommend the Utilities to include in the DSM programs a provision for rebates for utilization of vegetation consistent with the education programs.

In order to encourage installation of variable speed drive motors, Staff recommended the Utilities offer audits at a reduced cost to industrial customers. According to Staff, the audits should be directed toward identifying the potential for using variable-speed drive motors and, where appropriate, the Utilities should offer incentives to install such motors. RUCO recommended the audits be comprehensive in nature and that cost recovery be matched against future savings. Prior to implementation of any audit and associated incentive plan, Staff recommended each Utility submit its plan to Staff for approval. APS recommended a technical audit and analysis of variable speed drive opportunities as a first step in developing a promotional program. APS estimated it could develop a program for presentation to the Commission within six months with full implementation within a year. We concur that a technical audit and analysis of variable speed drive opportunities would be the appropriate first step.

There was testimony of a variety of methods that other state commissions have considered/utilized in formulating their DSM plans. A method which we consider a middle ground approach consists of a requirement for each participating utility to expend a percentage of revenues for DSM programs. It was estimated that a reasonable amount to spend over a two or three-year period was between one and five percent of a utility's revenues.

It is clear that the Utilities desire to implement DSM programs which are tailored to their own unique customer base. We concur that each utility is in the best position to tailor a DSM program to meet the need of its customers. With that said, we are going to approve what we will refer to as a "put up or shut up" philosophy at this time. We will authorize each utility to have free rein to develop their own DSM programs pursuant to the following guidelines:

(1) Each utility should strive to reach a target level of spending a minimum of 1 percent[1] of their annual revenues defined as jurisdictional sales revenues, less sales tax and other revenue based assessments (based on the previous year's revenue level) on DSM programs;

(2) Each utility must have a program to cover the subject areas of conservation lighting, education of the benefits of vegetation, and incentives for variable speed drive motors; and

(3) For each program in which the utility desires cost recovery, it must file details of the program with Staff. The details must include a clearly defined objective(s), performance measures and standards, and data sources. Further, there must be a clearly defined measurement period from which an audit will be conducted of the program results. The program results audit should then be filed for Staff's review and for possible inclusion at the next resource planning hearing. It would be the Commission's desire that well-documented program results could be used to encourage all utilities to adopt successful DSM programs. The results can also be used as

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[1] This percentage will be reviewed for possible adjustment at subsequent resource planning hearings.

a basis for increasing/decreasing premiums of rate of return as more fully discussed below.

Southwest Gas expressed concern that this should not be a forum for the advancement of promotional programs. We concur with that concern and want to emphasize that our use of the term "free rein" does not in any manner imply concurrence with such promotional programs. As a result, we believe in future resource planning dockets, that any public service corporation which is granted intervention and which has already developed a resource plan should also file a resource plan.

COSTS

Staff recommended the Utilities be authorized to recover all costs for programs that were reasonably and prudently administered. RUCO generally concurred with that approach with the added requirement that only the ratepayers who actually benefit should pay the cost. As to AEPCO, Staff recommended the costs be recovered through its fuel adjustment clause. Staff recommended that APS and TEP book their DSM costs in a deferral or balancing account for recovery at the utility's next rate case. Staff also proposed that prior to implementation of a program, the utility must demonstrate that there will likely be a positive net social benefit. In addition, Staff recommended that the utility monitor the program and if it is not working as expected, modify or terminate it.

There were questions as to whether or not costs included "lost profits" and if so, for how long. Staff argued against allowing lost revenues outside of a rate case. According to Staff, the existence of any revenue increase or cost reduction from sources or reasons unrelated to DSM are irrelevant since they would have occurred anyway. In addition without DSM, the utility would have incurred additional costs of service.

The Utilities concurred with Staff's emphasis on conservation and the concern for the environment. However, the Utilities argued for <u>full</u>, <u>timely and assured cost recovery</u> as being essential to the promotion of DSM programs. Further, they argued that the cost recovery must include provisions for lost revenues, with the timely recovery of these costs/profits done through an adjustor mechanism, or, as an alterative, the projected annual expenditures be included in base rates with any over/undercollection deferred with interest until the utility's next rate case. If the program was ordered or authorized by the Commission, the Utilities argued that there should be full recovery as long as the program was reasonably and prudently administered.

We are not convinced at this time to allow lost revenues as a general rule. We are still to be convinced that "lost revenues" is a suitable substitute for a more direct way of decoupling sales from profitability. Lost revenue adjustments do not seem to change the fact that increased sales are always profitable. We concur that successful DSM programs by their very nature will result in "lost profits" at least in the short run. However, recovery of lost net revenues may be appropriate in some cases, perhaps where the public service corporation does not earn a reward. Thus, at this time, we will defer to future rate cases the issue of whether lost net revenues are recoverable. At the same time, we concur that a utility should recover any costs incurred for pre-approved DSM programs. All DSM costs in excess of those included in the utility's most recent rate case should be deferred in a special DSM account for collection at the utility's next rate case. Any deferred costs should bear interest at the utility's most recently approved cost of capital.

We find that in order for utilities to properly weigh DSM against construction of more power plants, it is necessary for DSM to be as remunerative to utilities as the return on investments in generating facilities. Therefore, we will ensure that the utilities will recover rewards in rate cases commensurate with kW and kWh savings in a manner that makes DSM financially attractive to utilities. The particular reward mechanism will be determined in rate cases.

SUMMARY

This Commission wants to state loudly and clearly that it has a goal to have financially sound utilities and reasonable rates for consumers, while at the same time minimizing the effect on our fragile environment. Even though the primary focus of this docket was on resource planning and environmental concerns, it is our firm commitment to strive for the proper balancing of all three of the above listed concerns. In order to achieve our overall balancing goal, we are emphasizing the following objectives:

(1) Greater public involvement in resource planning with particular emphasis on consumer education;

(2) Establish a minimum revenue percentage for which all Utilities should strive to spend on pre-approved demand side management projects on an annual basis;

(3) Permit Utilities to fully recover costs for pre-approved demand side management projects;

(4) Require Utilities to provide clearly defined objectives, standards, and method of measuring the success of each demand side management project;

(5) Provide rewards in rate cases commensurate with kW and kWh savings in a manner that makes DSM financially attractive to utilities;

(6) Adopt a Total Societal Test for all new power plants which will include clearly identified and quantified environmental costs along with consideration of the economic impact on consumers and Utilities;

(7) Require Utilities to consider solar thermal plants for all future intermediate and peaking power plants; and

(8) Emphasize efficiency in construction of new buildings/equipment.

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Having considered the entire record herein and being fully advised in the premises, the Commission finds, concludes, and orders that:

FINDINGS OF FACT

1. APS, TEP, and AEPCO are certificated to provide electric service as public service corporations in the State of Arizona.

2. Southwest Gas is a California corporation engaged in the business of providing natural gas utility service to the public in portions of Arizona pursuant to the authority granted by this Commission.

3. Pursuant to A.A.C. R14-2-703, APS, TEP and AEPCO have filed resource plans.

4. Pursuant to A.A.C. R-14-2-704 (A), the Commission must schedule a hearing to review Utilities' resource plans and to evaluate those plans in light of analyses by Staff and others within 120 days of the Utilities' filing dates.

5. SRP agreed to participate in the resource planning process on a voluntary basis and filed its resource plan as requested in Decision No. 56381, dated March 9, 1989.

6. The Commission in Decision No. 56689, dated April 26, 1990, ordered a hearing to be scheduled for November 28, 1990 or later.

7. Pursuant to the April 30, 1990 Procedural Order and A.A.C. R14-2-704, a hearing was scheduled commencing on November 28, 1990 for the purpose of reviewing and evaluating the Utilities' resource plans.

8. RUCO and Southwest Gas intervened and provided analysis of the filed resource plans.

9. The evidence does not support any one methodology as being superior in implementation of resource planning.

10. A.A.C. R14-2-701 requires environmental effects to be taken into consideration as part of the total costs of electric energy services.

11. Staff's proposed Total Societal Test includes environmental costs.

12. A Total Societal Test based on unquantified costs will lead to uncertainty.

13. In order for resource planners to make informed decisions, environmental costs must be considered.

14. The Total Societal Test should be tempered with economic consideration of ratepayer concerns, utility financial stability, and economic growth within the service areas.

15. Any difference in long-term load forecasts of APS, AEPCO, TEP and SRP were satisfactorily explained.

16. Because of our sunny climate, solar technology has the potential to be a significant source of energy.

17. Staff recommended adoption of a rebuttable presumption that future construction of intermediate and peaking power plants should be solar thermal power.

18. To overcome Staff's recommended rebuttable presumption, a Utility must demonstrate that a solar thermal plant is significantly more expensive than alternative generation technologies.

19. There was insufficient evidence to support Staff's proposed rebuttable presumption to favor solar over all other industries, however, we will revisit the question of a rebuttable presumption at subsequent resource planning proceedings if it appears that the Utilities are not giving adequate consideration of solar thermal plants.

20. Solar technology should be considered in all cases of future construction of intermediate and peaking power plants.

21. Stand-alone photovoltaic systems can be cost competitive with line extensions in remote locations.

22. Additional studies should be done to determine if photovoltaics could possibly be cost effective in transmission and distribution systems.

23. The following subjects are examples in which DSM programs can be cost effective:

A. Conservation lighting;

B. Consumer education; and

C. Incentives for variable speed drive motors.

24. Construction of energy efficient buildings/equipment is a desirable long-term goal of resource planning.

25. Public involvement in resource planning is imperative for a successful program.

26. DSM programs by their very nature will result in "lost profits" at least in the short run.

27. A utility should be able to collect its reasonable costs for pre-approved DSM programs.

28. A program results audit will demonstrate the success/failure of a DSM program.

29. A utility should receive a reward for successful DSM programs.

30. The reward should be determined at the Utility's rate case and should be related to the savings in kW and kWh achieved and to the foregone return on investment on future power plant capacity that is no longer needed due to DSM.

31. Each utility should strive to spend a minimum of 1 percent per year of its revenues on DSM programs.

32. Staff proposed that utilities offer capacity and energy rates for purchases from qualifying facilities.

33. Staff identified certain inconsistencies between the Utilities' filings and Staff's own analysis in the areas of supply-side and demand-side programs.

CONCLUSIONS OF LAW

1. TEP, APS, AEPCO and Southwest Gas are Arizona public service corporations within the meaning of Article XV, Section 2, of the Arizona Constitution.

2. The Commission has jurisdiction over TEP, APS, AEPCO and Southwest Gas over the subject matter of this Order.

3. Pursuant to A.A.C. R14-2-703(F), each electric utility under the Commission's jurisdiction which operates or owns generating facilities must file with the Commission a resource plan every three years.

4. Under A.A.C. R14-2-704 (A), the Commission must schedule a hearing to review utility resource plans and to determine the degree of consistency between these plans and analyses conducted by Staff and other parties within 120 days of the submission of the utilities' demand forecasts, supply plans, uncertainty analyses, and integrated resource plans.

5. Pursuant to A.A.C. R14-2-704, the integrated resource plans of TEP, APS, and AEPCO were generally consistent.

ORDER

IT IS THEREFORE ORDERED that within two months of the effective date of this Decision, the Director of the Utilities Division shall form a task force comprised of interested representatives from the Corporation Commission, Arizona Public Service Company, Tucson Electric Power Company, Arizona Electric Power Cooperative, Salt River Project, Arizona Residential Utility Consumer Office, Arizona Energy Office, Arizona Commerce Department, universities, consumer groups, environmental groups and other interested groups for the purpose of identifying and quantifying costs to be included in the

Total Societal Costs. The framework to be considered by the task force should outline how these costs are to be quantified and/or monetized. In addition, the task force should address the suitability of assessing the costs on a qualitative basis when those costs cannot otherwise be quantified or monetized. The task force shall report to the Commission the results of the study by January 1, 1993.

IT IS FURTHER ORDERED that the Director of the Utilities Division shall implement a task force of appropriate representatives including but not limited to, cities and counties, residential and commercial construction groups, and labor and lenders to study the feasibility of implementing flexible or reduced hook-up fees that encourage construction of energy efficient buildings, and the task force shall report to the Commission the results of the study by January 1, 1993.

IT IS FURTHER ORDERED that the Staff of the Utilities Division shall present the results of the aforementioned task forces for Commission approval by April 1, 1993.

IT IS FURTHER ORDERED that the load forecasts filed by Arizona Public Service Company, Tucson Electric Power Company, and Arizona Electric Power Cooperative are hereby declared to be consistent pursuant to A.A.C. R14-2-704.

IT IS FURTHER ORDERED that in future resource planning dockets pursuant to A.A.C R14-2-704, any public service corporation which is granted intervention may file its resource plans for review by Staff and others if such a plan has already been prepared.

IT IS FURTHER ORDERED that Arizona Public Service, Tucson Electric Power, and Arizona Electric Power Cooperative shall provide adequate data in their next resource plans filed with the Commission to support their technology choices for peaking and intermediate plants.

IT IS FURTHER ORDERED that Arizona Public Service, Tucson Electric Power, and Arizona Electric Power Cooperative shall file a cost analysis for each of the resources considered and that solar thermal plants must be included as a possible alternative for the future construction of intermediate and peaking power plants.

IT IS FURTHER ORDERED that Arizona Public Service Company, Tucson Electric Power Company, and Arizona Electric Power Cooperative shall provide information to potential line extension customers in remote areas based on Staff guidelines regarding possible use of stand-alone photovoltaics that are cost competitive.

IT IS FURTHER ORDERED that Arizona Public Service Company, Tucson Electric Power Company, and Arizona Electric Power Cooperative shall have on-going demand side management programs to cover at a minimum the following subjects: conservation lighting; consumer education including vegetation; and incentives for variable speed drive motors.

IT IS FURTHER ORDERED that if Arizona Public Service Company, Tucson Electric Power Company, and Arizona Electric Power Cooperative offer discounted electric rates for economic development purposes, the energy efficiency of the customer's building and equipment are among the factors which should be considered.

IT IS FURTHER ORDERED that Arizona Public Service Company shall study the cost effectiveness of using photovoltaics in transmission and distribution systems and shall report to the Commission within

12 months of the date of this decision its findings and recommendations for implementation and cost recovery.

IT IS FURTHER ORDERED that Arizona Public Service Company, Tucson Electric Power Company, and Arizona Electric Power Cooperative should strive to reach a target level of spending a minimum of 1 percent of their annual revenues (based on the previous year's revenue level) on demand side management programs.

IT IS FURTHER ORDERED that Arizona Public Service Company, Tucson Electric Power Company, and Arizona Electric Power Cooperative, are hereby authorized to recover the costs of demand side management programs for which the Utilities Division Director has pre-approved the details for a program results audit.

IT IS FURTHER ORDERED that for each pre-approved program, Arizona Public Service, Tucson Electric Power Company and Arizona Electric Power Cooperative shall file the results of its program audit with the Director of the Utilities Division for review.

IT IS FURTHER ORDERED that the costs for all pre-approved demand side management programs which exceed the costs of such programs in the utility's last rate case shall be booked into a deferred account with interest to be accrued at the approved cost of capital of such utility with recovery to be at the utility's next rate case.

IT IS FURTHER ORDERED that Arizona Public Service Company, Tucson Electric Power Company, and Arizona Electric Power Cooperative shall file with their next resource plans proposed capacity and energy rates for purchases from qualifying facilities.

IT IS FURTHER ORDERED that Arizona Public Service Company, Tucson Electric Power Company, and Arizona Electric Power

Cooperative shall include provisions for competitive bidding for supply and/or demand side resources in future resource plans.

IT IS FURTHER ORDERED that the Commission shall consider recovery of lost net revenues, or a suitable alternative, due to demand side management in future rate cases.

IT IS FURTHER ORDERED that within 60 days of the date of this Decision, the Director of the Utilities Division and Arizona Electric Power Cooperative, shall meet and provide a recommendation to the Commission on a method for Arizona Electric Power Cooperative to recover the costs of pre-approved demand side management programs.

IT IS FURTHER ORDERED that this Decision shall become effective immediately.

BY ORDER OF THE ARIZONA CORPORATION COMMISSION.

CHAIRMAN COMMISSIONER COMMISSIONER

IN WITNESS WHEREOF, I, JAMES MATTHEWS, Executive Secretary of the Arizona Corporation Commission, have hereunto set my hand and caused the official seal of the Commission to be affixed at the Capitol, in the City of Phoenix, this 29 day of October, 1991.

James Matthews
JAMES MATTHEWS
EXECUTIVE SECRETARY

DISSENT ________________

JLR:dmr